

# THE MINERAL INDUSTRY OF THE NETHERLANDS

By Harold R. Newman

In terms of world production, the Netherlands was a modest producer of metallic, nonmetallic minerals, and mineral products. However, it was very important as a regional producer of natural gas and petroleum for the European market and played a major role as a transshipment center for mineral materials entering and leaving continental Europe.

Rotterdam, the world's largest container port and a major European transportation hub, remained extremely important as a shipping and storage center. With the ever-expanding inland transportation systems, goods entering or leaving Rotterdam can originate in or be destined for almost anywhere in continental Europe.

The volume of goods handled by the port of Rotterdam rose by 1.5% from the 1997 level to more than 315 million metric tons (Mt). Some categories of goods for which volumes increased were dry bulk goods (sand, gravel, minerals, up 10.5%) coal (up 6.4%), wet bulk goods (chemicals, oils, and fats, up 2.8%), and oil products (up 2.5%). Crude oil was still the largest individual goods flow at more than 100 Mt in 1998 (Holland Trade, 1999, *The Dutch Economy in 1998*, accessed June 14, 1999, at URL <http://www.hollandtrade.com/ECON98.htm>).

By contrast, the port handled less ore and scrap (down 6.5%). The facilities at Rotterdam were approaching capacity and could not accommodate a significant increase in traffic without upgrading and expansion.

Environmental policy in the Netherlands is the responsibility of the Ministry of Housing, Planning, and the Environment, and protecting and upgrading the quality of the environment is of high priority to the citizens of the Netherlands. In addition to protecting the environment, the Dutch Government also was concerned with remedying the practices of the past. One interesting feature of Dutch environmental policy is the use of covenants, which are voluntary agreements between industry and Government, and sometimes other organizations, to work together to achieve certain environmental goals, such as the reduction of waste.

Production of mineral commodities generally remained the same or dropped slightly during 1998. The high cost of social benefits contributed to the production costs of Dutch products making them less competitive on the world market. The only mining operations left in the Netherlands in 1998 were the extraction of peat, salt, and sand and gravel. The metal processing sector relied almost exclusively on imported raw materials, not only ores and concentrates, but also on scrap. (See table 1.)

The Government's role in the economy has declined since the 1980's, and privatization continued with little debate or

opposition. However, the state dominated the energy sector and played a large role in aviation, chemicals, steel, telecommunications, and transportation. (See table 2.)

The Netherlands was one of the top trading countries in the world and depended heavily on foreign trade. The country maintained a commitment to an open market and free trade. It was ranked fifth in exports of goods and services to the United States and eighth in imports of goods and services from the United States. Germany was the Netherlands' main trading partner (U.S. Department of State, 1999, *1998 economic policy and trade practices*, January 1999, accessed June 8, 1999, at URL <http://www.state.gov/www/issues/ec...eports/europe98/netherlands98.html>).

Hoogovens Aluminium BV continued to investigate the possibility of building its own powerplant to serve its aluminum and steel operations. An earlier study by the company had indicated that the organization could save as much as 20% on its energy costs if it were to build a 1,000-megawatt (Mw) powerplant; this would be equivalent to 6% of the country's electricity capacity.

The Atntheus Magnesium Development Programme Delfzijl (MDPD), a group of private and public interests, announced plans for the construction of a new 40,000 to 50,000-metric-ton-per-year (t/yr) primary magnesium smelter to be located in the Eemmond region in the northern part of the Netherlands. MDPD said this area was ideal owing to ready availability of a plant site at Delfzijl, more than 2,000 Mw of electric power, and nearby magnesium salt mining operations using high purity brines. The plant would be located near the existing primary aluminum producer and secondary aluminum processor, Hoogovens, which would provide optimal access for producing various alloys. The estimated capital cost would be about \$400 million (Metal Bulletin, 1998b).

The steel division of the Hoogovens Group, Hoogovens IJmuiden BV, was Europe's sixth largest steel producer. The company's reorganization plan took effect in mid-1995. The steel division was divided into five separate business-oriented organizations. In addition to the marketing, sales, and production units, a product/market unit was created to focus more attention on customer-driven innovation. To increase the international depth of the market, an international business development directorate was set up to build up sustainable positions on growth markets outside of Europe. Hoogovens was installing an in-line-strip-production (ISP) thin-slab facility from Mannesmann Demag at its steelworks at IJmuiden. The new plant will produce 1.3 Mt of low-carbon unalloyed steel. The ISP caster will produce slabs with thickness of 70 to 90 millimeter (mm). The rolling mill will process strip with a width

of 750 to 1,560 mm and a thickness of 1 to 2.5 mm. The first cast was scheduled for late 1999. The ISP plant will create 150 jobs and was expected to cost \$340 million (New Steel, 1998, Hoogovens will install Mannesmann thin-slab caster, March 1998, accessed May 27, 1998, at URL <http://www.newsteel.com/news/NW980303.htm>).

Hoogovens Ijmuiden BV and Sidmar NV were going ahead with a second galvanization line as planned. Galtec-2 will be built at Hoogovens' Ijmuiden steelworks and have a capacity of 400,000 t/yr and was to be operational in 2000. Galtec was a 50-50 joint venture between Hoogovens and Sidmar. Hoogovens and Sidmar inaugurated Galtec-1 at Sidmar's steelworks near Ghent, Belgium, in mid-1998. That line had a capacity of 400,000 t/yr. When Galtec-2 is in full production, the two companies will exchange their share holdings, leaving Hoogovens owning the Ijmuiden galvanizing line and Sidmar owning the Ghent galvanizing line (Metal Bulletin, 1998a).

The Netherlands was active on the international energy supply scene in more than one respect. The Netherlands supplied energy to Europe, served as the entrepôt for oil products for the whole of northwestern Europe, and was an international supporter of sustainable energy.

After the Nederlandse Aardolie Maatschappij (NAM) struck one of the largest gasfields in the world in the northern Netherlands in 1959, the decision was made to drill for natural gas and petroleum in the North Sea as well. Natural gas has become the most important mineral fuel produced in the Netherlands. The Groningen Gasfield at Slochteren was one of the world's largest producing natural gasfields.

N.V. Nederlandse Gasunie (Gasunie) purchased the gas produced by the 29 well clusters in the Groningen field operated by NAM and also purchased gas from several smaller fields on the Dutch mainland and the Dutch sector of the continental shelf. Gasunie estimated the total gas reserves contained in

fields already discovered in the Netherlands, as of January 1, 1999, to be approximately 1,850 billion cubic meters (N.V. Nederlandse Gasunie, 1998, Facts and figures, 1998, accessed June 15, 1999, at URL [http://www.gasunie.nl/eng/p\\_ga\\_aa3.htm](http://www.gasunie.nl/eng/p_ga_aa3.htm)).

Tebodin BV won a contract from a consortium of seven Danish, Finnish, and Swedish energy companies to carry out a feasibility study into the creation of an integrated natural gas network in the north of Europe, the so-called Nordic Gas Grid. The study will investigate the possibility of developing and linking the natural gas pipelines of Denmark, Finland, Norway, Sweden, Russia, and the Baltic Republics. Tebodin will also analyze the development of gas markets in this region (Holland Bulletin, 1998, Engineering, procurement and construction, October 1998, accessed June 14, 1999 at URL <http://www.hollandtrade.com/HB1098.htm>).

### References Cited

- Metal Bulletin, 1998a, Hoogovens, Sidmar go ahead with second galv line: Metal Bulletin, no. 8311, September 21, p. 8.  
———1998b, Netherlands plans new smelter: Metal Bulletin, no. 8279, May 21, p. 8.

### Major Sources of Information

- Geological Survey of the Netherlands  
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TABLE 1  
THE NETHERLANDS: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/	1994	1995	1996	1997	1998 e/	
<b>METALS</b>						
Aluminum metal:						
Primary	219,382	215,600	227,027	231,800 r/	264,000	
Secondary e/	175,300	191,500	150,000	150,400 3/	150,000	
Cadmium metal, primary	307	603	603	718 r/	739 3/	
Iron and steel:						
Ore, sintered (from imported ore)	3,021,500	4,246,400	4,250,000 e/	4,250,000 e/	4,250,000	
Metal:						
Pig iron, including blast-furnace ferroalloys (if any)	5,443,400	5,646,500	5,545,000	5,804,000	5,561,000 3/	
Steel:						
Crude	6,174,000	6,409,000	6,325,000	6,640,000	6,379,000 3/	
Semimanufactures	5,948,000	5,500,000 e/	4,810,000	5,175,000	5,200,000	
Lead, metal, refined, secondary	24,500	20,200	22,000 e/	19,500 e/	13,200 3/	
Zinc, metal, primary	212,600	206,300	207,400 r/	208,800 r/	218,700 3/	
<b>INDUSTRIAL MINERALS</b>						
Cement, hydraulic e/	3,400,000	3,400,000	3,300,000	3,300,000	3,200,000	
Magnesium compounds: e/						
Chloride	140,000	125,000	125,000	125,000	125,000	
Oxide	100,000	100,000	100,000	100,000	100,000	
Nitrogen, N content of ammonia	thousand tons	2,479 r/	2,580 r/	2,653 r/	2,478 r/	2,350
Salt, all types	do.	3,500 e/	4,976	5,530	5,500 e/	5,500
Sand, industrial	do.	25,006	23,159	24,000 e/	24,000 e/	24,000
Sodium compounds, n.e.s.: e/						
Carbonate, synthetic	400,000	400,000	400,000	400,000	400,000	
Sulfate:						
Natural	20,000	20,000	20,000	20,000	20,000	
Synthetic	15,000	15,000	15,000	15,000	15,000	
Sulfur: e/						
Elemental byproduct:						
Of metallurgy	125,000	125,000	150,000	150,000	125,000	
Of petroleum and natural gas	300,000	300,000	150,000	137,600	125,000	
Total	425,000	425,000	300,000	287,600	250,000	
Sulfuric acid, 100% H <sub>2</sub> SO <sub>4</sub> e/	1,250,000 3/	1,250,000	1,250,000	1,250,000	1,250,000	
<b>MINERAL FUELS AND RELATED MATERIALS</b>						
Carbon black e/	110,000	100,000	100,000	100,000	100,000	
Coke, metallurgical e/	2,750,000	2,800,000	2,800,000	2,800,000	2,600,000	
Gas:						
Manufactured e/	million cubic meters	10,000	10,000	10,000	10,000	
Natural:						
Gross	do.	78,400	78,350	89,700	88,000 e/	88,000
Marketed e/	do.	77,400	78,000	86,000	86,000	86,000
Natural gas liquids e/	thousand 42-gallon barrels	170,000	170,000	170,000	170,000	170,000
Peat, agricultural e/		300,000	300,000	300,000	300,000	300,000
Petroleum:						
Crude	thousand 42-gallon barrels	25,298	24,466	21,086	21,000 e/	21,000
Refinery products: e/						
Liquefied petroleum gas	do.	36,100	36,000	36,000	36,000	36,000
Mineral jelly and wax	do.	600	600	600	600	600
Gasoline, motor	do.	75,000	75,000	75,000	75,000	75,000
Naphtha and white spirit	do.	84,200	85,000	85,000	85,000	85,000
Jet fuel	do.	44,200	40,000	40,000	40,000	40,000
Kerosene	do.	1,520	1,600	1,600	1,600	1,600
Refinery gas	do.	22,000	20,000	20,000	20,000	20,000
Lubricants	do.	3,750	3,800	3,800	3,800	3,800
Residual fuel oil	do.	84,400 3/	85,000	85,000	85,000	85,000
Bitumen	do.	4,400	4,500	4,500	4,500	4,500
Unspecified	do.	25,000	25,000	25,000	25,000	25,000
Total	do.	381,170	376,500	376,500	376,500	376,500

e/ Estimated. r/ Revised.

1/ Table includes data available through April 1999.

2/ In addition to the commodities listed, the Netherlands produced construction materials, such as sand and gravel, but output was not reported and no basis exists to make reliable output.

3/ Reported figure.

TABLE 2  
THE NETHERLANDS: STRUCTURE OF THE MINERAL INDUSTRY IN 1998

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies	Location of main facility	Annual capacity
Aluminum				
Primary		Pechiney Nederland NV	Smelter at Vlissingen	175
Do.		Hoogovens Aluminium BV	Smelter at Delfzijl	100
Secondary		do.	do.	50
Do.		Alumax Recycling BV	Smelter at Kerkade	50
Cadmium	tons	Budelco BV (Australian Overseas Smelting Pty. Ltd, 50%; Kempensche Zinkmaatschappij Zincs de la Campine BV, 50%)	Plant at Budel-Dorplein	650
Cement		ENCI Nederland BV (Eerste Nederlandse Cement Industrie NV)	10 plants at Maastricht	2,700
Do.		Cementfabriek IJmuiden BV	3 plants at IJmuiden	1,600
Do.		Cementfabriek Rozenburg BV	2 plants at Rozenburg	920
Lead		Hollandse Metallurgische Industrie Billiton BV	Electrolytic plant at Arnhem	35
Do.		Billiton Witmetaal BV	Electrolytic plant at Naarden	6
Limestone		Ankerpoort NV (Lhoist SA, 100%)	Mines at Maastricht and Winterswijk	600
Magnesia		Nedmag Industries Mining & Manufacturing BV	Plant at Veendam	130
Do.		MAF Magnesite BV	Plant at Schiedam	40
Natural gas	million cubic meters per day	Nederlandse Aardolie Maatschappij BV (NAM)	Groningen, Leeuwarden, Assen, and other onshore gasfields and several offshore wells in the North Sea	225
Petroleum, crude	barrels per day	AMOCO, CONOCO, and UNOCAL	766 wells (204 producing) including North Sea fields: Haven, Helder, Helm, Hoorn, Kotter, Logger, and Rijn	83,500 (63,000)
Do.	do.	NAM	Onshore fields: Berkel, DeLier, Ijselmonde, Meerkapelle, Pernis, West, Pinacke, Rotterdam, Schoonebeck, Werkendam, and Zoetemeer	(20,500)
Refineries		6 companies, of which the major ones are:	Refinery at:	1,230,500
Do.	do.	Netherlands Refining Co.	Rotterdam	(446,000)
Do.	do.	Shell Nederland Raffinaderij BV	Pernis	(374,000)
Do.	do.	Esso Nederland BV	Rotterdam	(175,000)
Do.	do.	Total Raffinaderij Nederland NV	Vlissingen	(150,000)
Salt		Akzo Salt and Basic Chemicals BV	Mines at: Hengelo Delfzijl	4,000 (2,000) (2,000)
Sand, silica		Lieben Minerals BV	Mines at South Limburg	150
Sodium:				
Carbonate, synthetic		do.	Plant at Delfzijl	380
Sulfate, synthetic		do.	do.	600
Steel		Hoogovens IJmuiden BV	Plant at IJmuiden	6,100
Zinc		Budel Zinc BV (Pasminco Europe BV)	Plant at Budel-Dorplein	215